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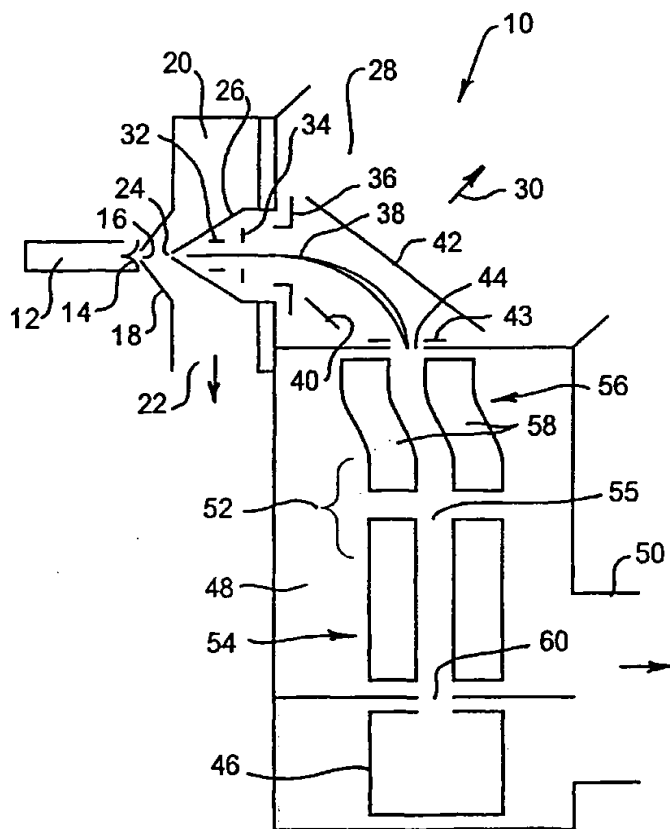
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(54) Title: **MASS SPECTROMETER INCLUDING A QUADRUPOLE MASS ANALYSER ARRANGEMENT**



(57) Abstract: A mass spectrometer (10) having an ion optics system (32, 34, 36, 40, 42) in a first vacuum chamber (28) which diverts ions travelling in a first direction from a source (12, 16, 24) through an angle such that neutral particles and photons from the source continue in the first direction and are removed. The diverted ion beam (38) is then directed into a quadrupole mass analyser arrangement (52) in a second vacuum chamber (48) which comprises a configured, for example curved, set of fringe electrodes (56) followed by a linear mass analyser (54) and then an ion detector (46). The configured fringe electrodes (56) again divert the ions prior to their passage into the linear quadrupole mass analyser (54) whereby additional neutral particles possibly created by passage of the ion beam through residual gas in the vacuum chambers (28, 48) are shielded from entering the linear mass analyser (54). The use of the configured set of fringe electrodes (56) in front of the linear mass analyser (54) has been found to substantially reduce background count rates, particularly for detection of isotopes of low atomic masses.

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